

2009

- Q.1 A central cavity of the kidney where urine is collected after filtration is known as:  
 A) Ureter  
 B) Pelvis  
 C) Urethra  
 D) Urinary Bladder

- Q.2 Aldosterone plays role in:  
 A) Transport of water  
 B) Transport of  $K^+$  ions into kidney

2010

- Q.3 The muscles that control urine in bladder are known as:  
 A) Striated muscles  
 B) Smooth muscles  
 C) Sphincter muscles  
 D) Circular muscles

2011

- Q.4 Reabsorption of water by counter current multiplier mechanism takes place at:  
 A) Proximal Tubule  
 B) Distal Tubule  
 C) Collecting Duct  
 D) Loop of Henle

- Q.5 Antidiuretic hormone helps in reabsorption of water by changing permeability of:  
 A) Proximal Tubule  
 B) Distal Tubule  
 C) Collecting Duct  
 D) Loop of Henle

- Q.6 Aldosterone helps in conservation or active absorption of:  
 A) Sodium  
 B) Calcium  
 C) Potassium  
 D) Bicarbonate ions

- Q.7 Maximum reabsorption takes place in which part of the nephron?  
 A) Distal tubule  
 B) Villi  
 C) Cortical tissue  
 D) Proximal tubule

2012

- Q.8 In nephron, most of the reabsorption takes place in the:  
 A) Distal tubule  
 B) Proximal tubule  
 C) Ascending limb  
 D) Descending limb

- Q.9 Blood enters the glomerulus through:  
 A) Efferent arteriole  
 B) Afferent arteriole  
 C) Renal artery  
 D) Renal vein

- Q.10 Which portion of nephron is under the control of ADH?  
 A) Bowman's capsule  
 B) Ascending arm  
 C) Distal and collecting ducts  
 D) Descending arm

- Q.11 Detection of change and signaling for effector's response to the control system is a:  
 A) Negative feedback  
 B) Positive feedback  
 C) Inter-coordination  
 D) Feedback mechanism

- Q.12 What are three components of mechanism of homeostatic regulations?  
 A) Receptors, control center and effectors  
 B) Sensory, motor and associative neurons  
 C) CNS, PNS and diffused nervous system  
 D) Cerebrum, cerebellum and pons

2013

- Q.13 The process through which the body maintains the internal environment from the harms of fluctuations in an external environment is called as:  
 A) Behavior of organisms  
 B) Adaptation  
 C) Thermoregulation  
 D) Homeostasis

**UHS Topic-11**

- Q.14 Site of filtration in nephron is:**  
 A) Glomerulus and Bowman's capsule  
 B) Proximal and distal end  
 C) Ascending and descending arm  
 D) Loop of Henle
- Q.15 Antidiuretic hormone increases the reabsorption of:**  
 A) Amino acids  
 B) Salts  
 C) Ammonia  
 D) Water
- Q.16 Active uptake of \_\_\_\_\_ in the ascending limb or thick loop of Henle is promoted by the action of aldosterone:**  
 A)  $K^+$   
 B)  $Cl^-$   
 C)  $Ca^{++}$   
 D)  $Na^+$
- Q.17 Active pumping out of  $Na^+$  occurs at which part of nephron?**  
 A) Proximal tubule  
 B) Descending loop of Henle  
 C) Ascending loop of Henle  
 D) Collecting duct

**2014**

- Q.18 Which one of the following is the main nitrogenous waste product in humans?**  
 A) Urea  
 B) Ammonia  
 C) Salts  
 D) Uric acid
- Q.19 Which one of the following is responsible for the production of concentrated urine?**  
 A) Juxtamedullary nephrons  
 B) Cortical nephrons  
 C) Proximal tubule  
 D) Distal tubule
- Q.20 Reabsorption of useful constituents normally takes place in which one of the following?**  
 A) Proximal tubule  
 B) Distal tubule  
 C) Bowman's capsule  
 D) Glomerulus
- Q.21 Which one of the following parts of excretory system in humans acts as countercurrent multiplier?**  
 A) Kidney  
 B) Cortex  
 C) Medulla  
 D) Loop of Henle
- Q.22 Anti-Diuretic Hormone (ADH) is released from:**  
 A) Anterior pituitary lobe  
 B) Posterior pituitary lobe  
 C) Hypothalamus  
 D) Thalamus

**2015**

- Q.23 Those nephrons which are present along the border of the cortex and medulla are called:**  
 A) Juxtamedullary nephrons  
 B) Cortical nephrons  
 C) Internal nephrons  
 D) Outer nephrons
- Q.24 When water is in short supply, increased water retention occurs through the:**  
 A) Cortical nephrons  
 B) Proximal convoluted tubule  
 C) Juxtamedullary nephrons  
 D) The tissue of cortex
- Q.25 In nephrons, counter-current multiplier occurs at:**  
 A) Loop of Henle  
 B) Collecting Duct  
 C) Bowman's capsule  
 D) Glomerulus
- Q.26 Ascending loop of Henle does not allow outflow of:**  
 A)  $Na^+$  ions  
 B)  $K^+$  ions  
 C)  $Cl^-$  ions  
 D) Water
- Q.27 A larger quantity of dilute urine is produced in diabetes insipidus. This disease is due to the deficiency of:**  
 A) Antidiuretic Hormone  
 B) Aldosterone  
 C) Thyroxin  
 D) Cortisol

- 2016  
Q.28 The removal of metabolic wastes from the blood is called:  
A) Thermoregulation  
B) Osmoregulation  
C) Kidney Failure  
D) Excretion
- Q.29 Bowman's capsule continues as an extensively convoluted portion known as:  
A) Peritubular capillaries  
B) Proximal convoluted tubules  
C) Efferent arterioles  
D) Afferent arterioles
- Q.30 The concentration of sodium ions in body fluids is controlled by the hormone:  
A) Renin  
B) Aldosterone  
C) Angiotensin  
D) CPK
- Q.31 A hormone released from posterior pituitary lobe acts to Actively transport water from filtrate in collecting tubules back to kidney is shown as:  
A) Renin  
B) Antidiuretic hormone  
C) Angiotensin  
D) Growth Factor
- Q.32 Humans have homeostatic thermostat present in a specified portion of the brain that is:  
A) Lateral ventricle  
B) Thalamus  
C) Spinal Cord  
D) Hypothalamus
- 2017  
Q.33 Select the part of nephron which is not permeable to water and stops its outflow:  
A) Glomerulus  
B) Proximal Tubule  
C) Ascending loop  
D) Descending loop
- Q.34 When water content in body becomes high, what will happen?  
A) ADH release will be inhibited  
B) ADH will be released in large amount  
C) Aldosterone will be released  
D) Anterior pituitary will produce ADH
- Q.35 The major factor in producing hypertonic urine is:  
A) Glomerulus  
B) Influence of aldosterone  
C) ADH influencing on collecting duct  
D) Gradual increase in osmolarity from cortex to inner medulla
- Q.36 What is the least selective process during urine formation?  
A) Reabsorption  
B) Pressure filtration  
C) Secretion  
D) Differential permeability
- Q.37 Vessel which carry blood to the glomerulus is called:  
A) Efferent arteriole  
B) Renal vein  
C) Vasa recta  
D) Afferent arteriole
- 2017 Re-take
- Q.38 The mechanism of regulation and its environment, of solute and the gain and loss of water is called:  
A) Thermoregulation  
B) Osmoregulation  
C) Excretion  
D) Relaxation
- Q.39 All of the following are endotherms except:  
A) Birds  
B) Some fishes  
C) Amphibians  
D) Flying insects
- 2018  
Q.40 The hormone which controls the uptake of the sodium ions in kidney and its maintenance in blood pressure:  
A) Gonadotrophic hormone  
B) Somatotropin hormone  
C) Thyroxine hormone  
D) Aldosterone hormone

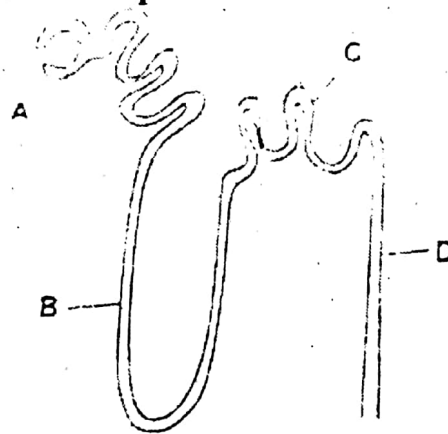


## UHS Topic-11

- Q.41 The capillaries of glomerulus rejoin to form a/an \_\_\_\_\_.  
 A) Collecting duct  
 B) Peritubular capillaries  
 C) Afferent arteriole  
 D) Efferent arteriole
- Q.42 When filtration is completed the waste products through distal tube of nephrons empties to:  
 A) Proximal tubules  
 B) Efferent arterioles  
 C) Peritubular capillaries  
 D) Collecting tubules
- Q.43 Blood solute potential is controlled by following hormone:  
 A) Vasopressin  
 B) Thyroxine  
 C) Epinephrine  
 D) Estrogen
- Q.44 Keeping correct balance of ions and water in our body is called as:  
 A) Excretion  
 B) Thermoregulation  
 C) Osmoregulation  
 D) Selective reabsorption

2019

- Q.45 The main nitrogenous excretory product of humans is:  
 A) Uric acid  
 B) Ammonia  
 C) Urea  
 D) Ammonium
- Q.46 Given below is the diagram of nephron without vascular supply.



What is the name of Part C?

- A) Collecting tubule  
 B) Proximal tubule  
 C) Distal tubule  
 D) Loop of Henle
- Q.47 The route of urine excretion from kidney to outside of body is:  
 A) Kidney → ureter → urinary bladder → urethra  
 B) Urinary bladder → kidney → ureter → urethra  
 C) Kidney → ureter → urethra → urinary bladder  
 D) Kidney → urethra → urinary bladder → ureter
- Q.48 Substances responsible for increasing the set point of the hypothalamus are called:  
 A) Pepsin  
 B) Pyrogens  
 C) Prions  
 D) Androgens



# ANSWER KEY

## TOPIC-WISE MCQs

|    |   |    |   |    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|----|---|----|---|
| 1  | D | 11 | C | 21 | A | 31 | D | 41 | D | 51 | C |
| 2  | A | 12 | C | 22 | B | 32 | A | 42 | D | 52 | C |
| 3  | D | 13 | A | 23 | D | 33 | C | 43 | D | 53 | D |
| 4  | A | 14 | C | 24 | A | 34 | C | 44 | D | 54 | C |
| 5  | A | 15 | B | 25 | D | 35 | C | 45 | D | 55 | C |
| 6  | A | 16 | B | 26 | B | 36 | B | 46 | A | 56 | C |
| 7  | B | 17 | C | 27 | B | 37 | D | 47 | D | 57 | C |
| 8  | B | 18 | C | 28 | C | 38 | D | 48 | B | 58 | D |
| 9  | D | 19 | A | 29 | D | 39 | D | 49 | C |    |   |
| 10 | C | 20 | C | 30 | B | 40 | A | 50 | B |    |   |

## PAST PAPERS MCQs

|    |   |    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|----|---|
| 1  | B | 11 | D | 21 | D | 31 | B | 41 | D |
| 2  | C | 12 | A | 22 | B | 32 | D | 42 | D |
| 3  | C | 13 | D | 23 | A | 33 | C | 43 | A |
| 4  | D | 14 | A | 24 | C | 34 | A | 44 | C |
| 5  | C | 15 | D | 25 | A | 35 | D | 45 | C |
| 6  | A | 16 | D | 26 | D | 36 | B | 46 | C |
| 7  | D | 17 | C | 27 | A | 37 | D | 47 | A |
| 8  | B | 18 | A | 28 | D | 38 | B | 48 | B |
| 9  | B | 19 | A | 29 | B | 39 | C |    |   |
| 10 | C | 20 | A | 30 | B | 40 | D |    |   |

## PAST PAPER MCQs

2010  
Q.1

During muscle contraction:

- A) I-band shortens
- B) Myosin filaments shorten
- C) Actin filaments shorten
- D) Z-line disappears

2011  
Q.2

Muscle is made up of many cells which are referred to as:

- A) Myofilaments
- B) Myofibrils
- C) Sarcolemma
- D) Muscle Fibers

Q.3

The pigment which stores oxygen in muscles is:

- A) Hemoglobin
- B) Myoglobin
- C) Myosin
- D) Actinomyosin

Q.4

The length of myofibril from one Z-band to the next is known as:

- A) Sarcomere
- B) Sarcolemma
- C) Sarcoplasm
- D) Muscle Fiber

Q.5

Calcium ions released during a muscle fiber contraction attach with:

- A) Myosin
- B) Actin
- C) Tropomyosin
- D) Troponin

2012  
Q.6

Each muscle fiber is surrounded by membrane which is called:

- A) Sarcomere
- B) Sarcolemma
- C) Twitch fiber
- D) Capsule

Q.7

When calcium ions are released from the sarcoplasmic reticulum they bind with \_\_\_\_\_ during muscle contraction.

- A) Tropomyosin
- B) Sarcolemma
- C) Cytosol's ions
- D) Troponin

2013  
Q.8

Where can we find H zone in the figure of fine structure of skeletal muscle's myofibril?

- A) In the mid of A-band
- B) In I-band
- C) Besides the Z-line
- D) Along the I-band

Q.9

The length of myofibril from one Z-band to the next is described as:

- A) Sarcolemma
- B) Sarcoplasm
- C) Sarcomere
- D) Muscle fiber

Q.10

The  $\text{Ca}^{++}$  ions released during a muscle fiber contraction attach with:

- A) Myosin
- B) Actin
- C) Troponin
- D) Tropomyosin

2014

Q.11

The repeated protein pattern of myofibrils is called:

- A) Sarcomere
- B) Zyomere
- C) Sarcolemma
- D) Cross bridges

Q.12

When more energy is required in muscle contraction then that energy can also be produced by \_\_\_\_\_ as a secondary source.

- A) Glucose
- B) Phosphocreatine
- C) Fructose
- D) Lactic acid

**UHS Topic-12**

**2015**

- Q.13** A sarcomere is the region of a myofibril between two successive:  
 A) M-lines C) I-bands  
 B) Z-lines D) T-tubules
- Q.14** The sarcolemma of muscle fiber folds inwards and forms a system of tubes which runs through the sarcoplasm called:  
 A) Myofilaments C) Z-lines  
 B) Sarcoplasmic reticulum D) Transverse tubules
- Q.15** According to sliding filament theory, when muscle fibers are stimulated by nervous system, which of the following changes occurs?  
 A) I-bands shorten C) Z-lines move further apart  
 B) H-zone becomes more visible D) A-bands shorten

**2016**

- Q.16** Each muscle fiber is surrounded by a modified cell membrane called:  
 A) Sarcolemma C) Myosin Filament  
 B) Sarcomere D) Myofilament

**2017**

- Q.17** Each muscle fiber is surrounded by a modified cell membrane called:  
 A) Sarcolemma C) Myosin Filament  
 B) Sarcomere D) Myofilament

**2017 Re-Take**

- Q.18** Over lapping of thick filament occurs in:  
 A) A-Band C) M-line  
 B) I-Band D) Z-line

**2019**

- Q.19** Thin filaments of muscles contain \_\_\_\_\_ chains of actin molecules.  
 A) Four C) Three  
 B) One D) Two
- Q.20** The thick filaments in a myofibril of muscles are made of \_\_\_\_\_.  
 A) Haemoglobin C) Actin  
 B) Myoglobin D) Myosin
- Q.21** The function of calcium ions in muscle contraction is to:  
 A) Bind to troponin molecule and cause them to move  
 B) Aid in the transmission of nerve impulse  
 C) Polarize visible light  
 D) Bind to tropomyosin molecule and cause them to form cross bridges



**ANSWER KEY****TOPIC-WISE MCQs**

|    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|
| 1  | B | 11 | D | 21 | A | 31 | B |
| 2  | B | 12 | C | 22 | B |    |   |
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| 5  | C | 15 | D | 25 | A |    |   |
| 6  | B | 16 | B | 26 | D |    |   |
| 7  | B | 17 | C | 27 | B |    |   |
| 8  | A | 18 | A | 28 | B |    |   |
| 9  | A | 19 | C | 29 | B |    |   |
| 10 | B | 20 | B | 30 | D |    |   |

**PAST PAPERS MCQs**

|    |   |    |   |    |   |
|----|---|----|---|----|---|
| 1  | A | 11 | A | 21 | A |
| 2  | D | 12 | B |    |   |
| 3  | B | 13 | B |    |   |
| 4  | A | 14 | D |    |   |
| 5  | D | 15 | A |    |   |
| 6  | B | 16 | A |    |   |
| 7  | D | 17 | A |    |   |
| 8  | A | 18 | A |    |   |
| 9  | C | 19 | D |    |   |
| 10 | C | 20 | D |    |   |

## PAST PAPER MCQs

2008  
Q.1

Which of the following promotes both leaf and fruit growths?

- A) Auxins  
B) Gibberellins  
C) Abscissic acid  
D) Ethane

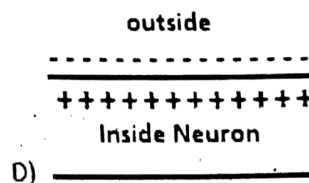
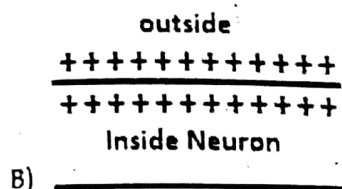
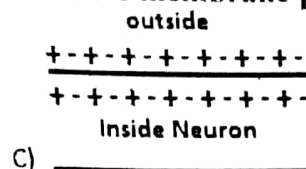
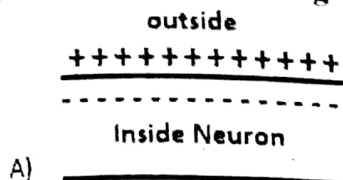
Q.2

Which of the following receptors produce sensation of pain?

- A) Mechanoreceptor  
B) Nociceptors  
C) Chemoreceptors  
D) Thermoreceptors

2009  
Q.3

Which one of the following conditions best describes active membrane potential?



Q.4

Which of the following neurotransmitters lies outside the central nervous system?

- A) Serotonin  
B) Dopamine  
C) Acetylcholine  
D) Adrenaline

2010  
Q.5

A typical neuron at rest:

- A) Is more positive outside than inside  
B) Is more negative outside than inside  
C) Has no charge on either side  
D) Has an equal charge on either side

Q.6

Which one of the following is a precursor of steroid hormones?

- A) Glycerol  
B) Sterol  
C) Amino acids  
D) Cholesterol

Q.7 Hormones are the organic compounds of varying structural complexity. Which of the following is not a function or property of these compounds?

- A) They initiate new biochemical reactions  
B) They are poured directly into blood  
C) They may be proteins  
D) They affect target cells

2011  
Q.8

Which group of hormones is made up of amino acids and their derivatives?

- A) Vasopressin and ADH  
B) Epinephrine and Non-Epinephrine  
C) Estrogen and Testosterone  
D) Insulin and Glucagon

Q.9

Which of the following is the function of glucagon hormone?

- A) Glycogen to Glucose  
B) Glucose to Glycogen  
C) Glucose to Lipids  
D) Glucose to Proteins

2012  
Q.10

The part of neuron fiber which conducts nerve impulses from the cell body is:

- A) Dendron  
B) Dendrites  
C) Axon  
D) Peripheral branch

# UHS Topic-13

## Communication

Q.11 Ductless glands are known as:

- A) Endocrine gland
- B) Exocrine gland
- C) Salivary glands
- D) Bile glands

Q.12 Vasopressin and Oxytocin are released from the:

- A) Placenta
- B) Ovary
- C) Anterior pituitary
- D) Posterior pituitary

Q.13  $\beta$ -cells of pancreas secrete a hormone that is called:

- A) Insulin
- B) Glucagon
- C) Antidiuretic hormone
- D) Gastrin

2013

Q.14 Alpha cells of Islets of Langerhans secrete hormone called:

- A) Glucocorticoid
- B) Insulin
- C) Glucagon
- D) Aldosterone

Q.15 Which of the following is the function of glucagon hormone?

- A) Glucose to lipids
- B) Glucose to proteins
- C) Glucose to glycogen
- D) Glycogen to glucose

Q.16 Chemically, insulin and glucagon are:

- A) Carbohydrates
- B) Proteins
- C) Lipids
- D) Nucleic acids

2014

Q.17 Which one of the following is a steroid hormone?

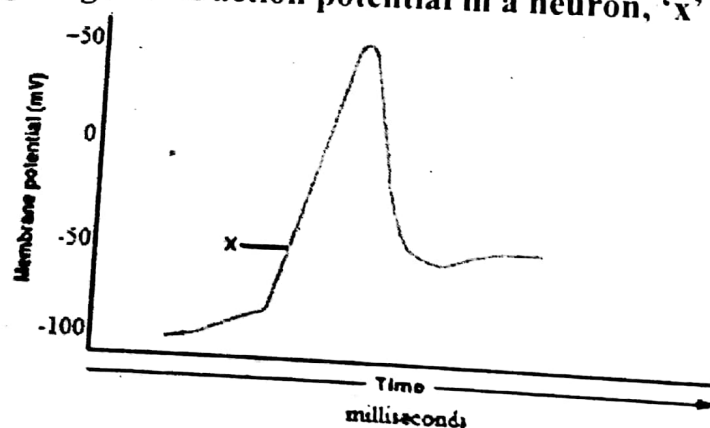
- A) Glucagon
- B) Thyroxin
- C) Epinephrine
- D) Estrogen

2015

Q.18 Conduction of action potentials from one node of Ranvier to another in myelinated neurons is through:

- A) Hyperpolarization
- B) Resting Membrane Potential
- C) Depolarization
- D) Saltatory Conduction

Q.19 In the following diagram of action potential in a neuron, 'x' depicts:



A) Depolarization

B) Polarization

C) Repolarization

D) Hyperpolarization

Q.20 Neurotransmitter secreted at synapse outside the central nervous system is:

- A) Dopamine
- B) Polypeptide
- C) Androgen
- D) Acetylcholine

Q.21  $\alpha$ -cells of pancreas secrete a hormone known as:

- A) Glucagon
- B) Insulin
- C) Gastrin
- D) Rennin



2016  
Q.22 \_\_\_\_\_ hormone is antagonistic to insulin and causes increase in blood glucose level.

- A) Glucagon
- B) Nor-epinephrine
- C) Calcitonin
- D) Thyroxin

Q.23 Beta cells of islets of Langerhans produce \_\_\_\_\_ hormone.

- A) Glucagon
- B) Insulin
- C) Pancreatic Juice
- D) Parathormone

2017  
Q.24 The nerve impulse which jumps from node to node in myelinated neurons is called as:

- A) Resting membrane potential
- B) Saltatory nerve impulse
- C) Threshold stimulus
- D) Initial nerve impulse

2017 Re-Take

Q.25 Pick out the pressure receptors:

- A) Chemoreceptors
- B) Mechanoreceptors
- C) Photoreceptors
- D) Thermoreceptors

Q.26 Which of the following produce response?

- A) Effectors
- B) Stimulators
- C) Nerve
- D) Brain

2018

Q.27 Taste buds on the tongue are example of:

- A) Thermoreceptors
- B) Photoreceptors
- C) Pressure receptors
- D) Chemoreceptors

Q.28 When a nerve impulse jumps from one node of Ranvier to the next in a myelinated neuron, it is called \_\_\_\_\_.

- A) Saltatory conduction
- B) Synapses
- C) Resting potential
- D) Membrane potential

**Q.29** How many sodium ions are pumped out in response to two potassium ions transported into the membrane?

- A) 4
- B) 2
- C) 1
- D) 3

**Q.30** In nervous system, chemical messengers are called \_\_\_\_\_.

- A) Enzymes
- B) Neurotransmitters
- C) Chemoreceptors
- D) Hormones

**Q.31** \_\_\_\_\_ hormone is released from posterior lobe of pituitary gland.

- A) Thyroid stimulating hormone
- B) Adrenaline
- C) FSH
- D) Antidiuretic hormone

**2019**

**Q.32** The reflex action is the phenomena which only involves:

- A) Brain, receptors, spinal cord
- B) Receptors, effectors and spinal cord
- C) Receptors, neurons, brain
- D) Receptors and effectors

**Q.33** In an action potential, the permeability of sodium ions in the neuron increases due to:

- A) Repolarization
- B) The opening of sodium channels/gates
- C) The action of the acetylcholinesterase enzyme
- D) Sodium ions forming an ionic bonding

**Q.34** If stimulation is above \_\_\_\_\_, impulses travel to the brain along the sensory neuron.

- A) Action Potential
- B) Threshold
- C) Resting Potential
- D) Recovery Period

**Q.35** Acetylcholine and nor-adrenalin are two types of \_\_\_\_\_ used in our nervous system.

- A) Hormones
- B) Channel and carrier proteins in the cell membrane of a neuron
- C) Enzymes
- D) Neurotransmitters

**Q.36** The main neurotransmitter for synapses is \_\_\_\_\_ which lie outside the CNS.

- A) Choline
- B) Acetylcholine
- C) Acetaldehyde
- D) Phosphatidylcholine

# ANSWER KEY

## TOPIC-WISE MCQs

|    |   |    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|----|---|
| 1  | C | 11 | B | 21 | B | 31 | D | 41 | B |
| 2  | B | 12 | C | 22 | B | 32 | C | 42 | D |
| 3  | D | 13 | D | 23 | A | 33 | B | 43 | B |
| 4  | A | 14 | C | 24 | A | 34 | C | 44 | B |
| 5  | D | 15 | B | 25 | A | 35 | C | 45 | A |
| 6  | A | 16 | D | 26 | B | 36 | C | 46 | D |
| 7  | B | 17 | C | 27 | B | 37 | C |    |   |
| 8  | B | 18 | D | 28 | C | 38 | D |    |   |
| 9  | B | 19 | B | 29 | D | 39 | B |    |   |
| 10 | D | 20 | C | 30 | C | 40 | C |    |   |

## PAST PAPERS MCQs

|    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|
| 1  | B | 11 | A | 21 | A | 31 | D |
| 2  | B | 12 | D | 22 | A | 32 | B |
| 3  | D | 13 | A | 23 | B | 33 | B |
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| 5  | A | 15 | D | 25 | B | 35 | D |
| 6  | D | 16 | B | 26 | A | 36 | B |
| 7  | A | 17 | D | 27 | D |    |   |
| 8  | B | 18 | C | 28 | A |    |   |
| 9  | A | 19 | A | 29 | D |    |   |
| 10 | C | 20 | D | 30 | B |    |   |



## PAST PAPER MCQs

2009

- Q.1 Which of the following will happen if fertilization does not occur?  
 A) Menopause starts  
 B) Corpus luteum degenerates  
 C) FSH secretion is increased  
 D) Progesterone secretion is increased

2010

- Q.2 Which of the following sequence is correct?  
 A) LH → FSH → Estrogen → Progesterone  
 B) FSH → LH → Progesterone → Estrogen  
 C) FSH → Estrogen → Progesterone → LH  
 D) FSH → Estrogen → LH → Progesterone
- Q.3 The first cells produced by the repeated cell division of germinal epithelium of testis are:  
 A) Interstitial cells  
 B) Spermatogonia  
 C) Secondary spermatocytes  
 D) Spermatids

2011

- Q.4 A type of cell in human testes which produces testosterone is called:  
 A) Interstitial Cells  
 B) Germ Cells  
 C) Sertoli Cells  
 D) Spermatocytes
- Q.5 Breakdown of endometrium during menstruation is due to:  
 A) Increase in Level of LH  
 B) Decrease in Level of Progesterone  
 C) Increase in Level of Progesterone  
 D) Increase in Level of Estrogen
- Q.6 Luteinizing hormone triggers:  
 A) Cessation of Oogenesis  
 B) Breakdown of Oocyte  
 C) Ovulation  
 D) Development of Zygote
- Q.7 Oogonia are produced in the germ cells:  
 A) Both Uterus and Cervix  
 B) Cervix  
 C) Uterus  
 D) Ovary

2012

- Q.8 Second meiotic division in the secondary oocyte proceeds as far as:  
 A) Metaphase  
 B) Prophase  
 C) Anaphase  
 D) Telophase
- Q.9 Discharge of ovum or secondary oocyte from ovary or from Graafian follicle is called:  
 A) Fertilization  
 B) Pollination  
 C) Follicle formation  
 D) Ovulation
- Q.10 Which one of the following differentiates directly into mature sperm?  
 A) Primary spermatocyte  
 B) Secondary spermatocyte  
 C) Spermatogonia  
 D) Spermatid

2013

- Q.11 What is the location of interstitial cells in testes?  
 A) Inside the seminiferous tubules  
 B) Between the seminiferous tubule  
 C) Among the germinal epithelial cells  
 D) Around the testes
- Q.12 A type of cells in human testes which produce testosterone are called?  
 A) Germ cells  
 B) Sertoli cells  
 C) Interstitial cells  
 D) Spermatocytes
- Q.13 The hormone produced from corpus luteum is:  
 A) Prolactin  
 B) FSH  
 C) Progesterone  
 D) LH

## UHS Topic-14

## Reproduction

- Q.14 Spermatogonia differentiate directly into?  
 A) Primary spermatocytes  
 B) Secondary spermatocytes  
 C) Spermatozoa  
 D) Spermatids
- Q.15 Testosterone is produced by which one of the following?  
 A) Sertoli cells  
 B) Germinal epithelium  
 C) Interstitial cells  
 D) Spermatogonia
- Q.16 The oocyte released during ovulation is in:  
 A) Anaphase I  
 B) Prophase I  
 C) Metaphase I  
 D) Metaphase II
- Q.17 Yellowish glandular structure formed after the release of egg from follicle is called:  
 A) Corpus callosum  
 B) Graafian follicle  
 C) Corpus luteum  
 D) Follicle atresia
- Q.18 On puberty, the development of primary follicles is stimulated by:  
 A) ICSH  
 B) FSH  
 C) LH  
 D) Estrogen
- Q.19 In females, FSH stimulates the ovary to produce:  
 A) Progesterone  
 B) Prolactin  
 C) Estrogen  
 D) Oxytocin
- Q.20 In which phase of human female menstrual cycle, endometrium prepares for the implantation of embryo?  
 A) Proliferative phase  
 B) Menstrual phase  
 C) Secretory phase  
 D) Ovulation phase
- Q.21 Events of menstrual cycle are regulated by the:  
 A) Ethylene  
 B) Gonadotrophins  
 C) Auxins  
 D) Gibberellins
- Q.22 Decrease of FSH and increase of estrogen cause pituitary gland to secrete:  
 A) Somatotropin  
 B) Luteinizing hormone  
 C) Testosterone  
 D) Spermatogonium
- Q.23 FSH stimulates the production of estrogen hormone which has two targets \_\_\_\_\_ and \_\_\_\_\_.  
 A) Uterus, posterior pituitary  
 B) Ovaries, uterus  
 C) Uterus, anterior pituitary  
 D) Ovaries, hypothalamus
- Q.24 Ovulation is suppressed by progesterone via:  
 A) Inhibition of LH only  
 B) Inhibition of FSH & stimulation of LH  
 C) Inhibition of LH & stimulation of FSH  
 D) Inhibition of both FSH & LH
- Q.25 Which of the following directly develops into sperms:  
 A) Primary spermatocytes  
 B) Spermatids  
 C) Secondary spermatocytes  
 D) Spermatogonia
- 2017 Re-Take
- Q.26 Which of the following hormone suppresses ovulation?  
 A) Progesterone  
 B) Insulin  
 C) F.S.H  
 D) Prolactin

**Q.27** Which of the following hormone causes ovulation?

- A) LH
- B) Progesterone
- C) Estrogen
- D) FSH

**Q.28** Meiosis occurs in human females during:

- A) Ovulation
- B) Gametogenesis
- C) Spermatogenesis
- D) Spermiogenesis

**2018**

**Q.29** Which hormone is released in female in response to FSH from pituitary gland?

- A) Oxytocin
- B) ADH
- C) Estrogen
- D) Progesterone

**Q.30** Which of the following hormone acts on the uterus wall for thickening?

- A) Zona pellucida
- B) Progesterone
- C) Oxytocin
- D) Follicle stimulating hormone

**2019**

**Q.31** Which hormonal pair would maintain the endometrium and make it receptive for implantation of embryo?

- A) Luteinizing Hormone and Progesterone
- B) Estrogen and Follicle Stimulating Hormone
- C) Luteinizing Hormone and Follicle Stimulating Hormone
- D) Estrogen and Progesterone

**Q.32** Which of the following hormone stimulates the ovulation from the follicle into oviduct?

- A) Luteinizing hormone
- B) Follicle stimulating hormone
- C) Estrogen
- D) Progesterone

**Q.33** During spermatogenesis, the \_\_\_\_\_, which are haploid cells eventually mature into spermatozoa/mature sperms?

- A) Secondary spermatocytes
- B) Primary spermatocytes
- C) Spermatogonia
- D) Spermatids



**ANSWER KEY** >>**TOPIC-WISE MCQs**

|    |   |    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|----|---|
| 1  | B | 11 | D | 21 | A | 31 | B | 41 | D |
| 2  | C | 12 | A | 22 | C | 32 | C | 42 | B |
| 3  | A | 13 | D | 23 | C | 33 | A |    |   |
| 4  | C | 14 | C | 24 | C | 34 | B |    |   |
| 5  | A | 15 | B | 25 | A | 35 | C |    |   |
| 6  | D | 16 | C | 26 | D | 36 | B |    |   |
| 7  | B | 17 | C | 27 | A | 37 | C |    |   |
| 8  | C | 18 | C | 28 | C | 38 | C |    |   |
| 9  | C | 19 | C | 29 | C | 39 | C |    |   |
| 10 | C | 20 | B | 30 | D | 40 | C |    |   |

**PAST PAPERS MCQs**

|    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|
| 1  | B | 11 | B | 21 | B | 31 | D |
| 2  | D | 12 | C | 22 | B | 32 | A |
| 3  | B | 13 | C | 23 | C | 33 | D |
| 4  | A | 14 | A | 24 | A |    |   |
| 5  | B | 15 | C | 25 | B |    |   |
| 6  | C | 16 | D | 26 | A |    |   |
| 7  | D | 17 | C | 27 | A |    |   |
| 8  | A | 18 | B | 28 | B |    |   |
| 9  | D | 19 | C | 29 | C |    |   |
| 10 | D | 20 | C | 30 | B |    |   |



## PAST PAPER MCQs

2008

Q.1

Position of a gene on the chromosome is called its:

- A) Phenotype  
B) Locus  
C) Junction  
D) Genotype

Q.2

The color phenotype of the grain is the sum of individual effects of \_\_\_\_\_ alleles.

- A) Six  
B) Four  
C) Five  
D) Five or three

Q.3

The genes of blue opsins are present on:

- A) Autosome 9  
B) Autosome 7  
C) Autosome 1  
D) Autosome 3

2009

Q.4

If all the members of a population are homozygous for the same allele, that allele is said to be:

- A) Random in population's pool  
B) Fixed in population's pool  
C) Random in a species  
D) Fixed in the gene pool

Q.5

Which one of the following is correct about 'Rh+' blood?

- A) Will produce anti-Rh antibodies if given Rh<sup>+</sup> blood  
B) Cannot produce anti-Rh antibodies in any case  
C) Rh<sup>+</sup> antigens are present on RBCs  
D) Rh<sup>+</sup> antibodies are present in blood

Q.6

What is true about pattern baldness?

- A) It is autosomal recessive disease in males  
B) It is autosomal dominant disease in males  
C) It is X-linked disease  
D) It is Y-linked disease

2010

Q.7

The karyotype of an individual is \_\_\_\_\_ of chromosomes.

- A) Number  
B) Types  
C) Number, types and chemical composition  
D) Number and type

Q.8

Gene for albinism in man is present on chromosome number:

- A) 11  
B) 22  
C) 21  
D) 12

Q.9

When a disease is transmitted directly from an affected father to his son, it is called:

- A) X-linked  
B) Autosomal  
C) Y-linked  
D) X and Y-linked

2011

Q.10

Which trait in humans is an example of multiple alleles?

- A) Eye colour  
B) Skin colour  
C) ABO-blood group  
D) Rh-Blood group

Q.11

Which of the following will be hemophilic?

- A)  $X^{H}X^{h}$   
B)  $X^{H}X^{H}$   
C)  $X^{h}Y$   
D)  $X^{H}Y$

Q.12

Which of the following is an example of X-linked recessive trait in humans?

- A) Hypophosphatemic rickets  
B) Colour blindness  
C) Baldness  
D) Beard growth

**UHS Topic-15****2012**

- Q.13** The gene for ABO-blood group system in humans is represented by symbol:
- |      |      |
|------|------|
| A) X | C) Y |
| B) I | D) O |

**2014**

- Q.14** Position of a gene within a DNA molecule is:
- |           |             |
|-----------|-------------|
| A) Locus  | C) Amplicon |
| B) Origin | D) Filial   |

**2015**

- Q.15** ABO blood system is an example of:
- |                   |                      |
|-------------------|----------------------|
| A) Polygenes      | C) Multiple alleles  |
| B) Multiple genes | D) Multiple mutation |
- Q.16** Human skin color is a good example of:
- |                           |                         |
|---------------------------|-------------------------|
| A) Sex linked inheritance | C) X-linked inheritance |
| B) Polygenic inheritance  | D) Y-linked inheritance |
- Q.17** Number of pairs of autosomes in humans is:
- |       |       |
|-------|-------|
| A) 23 | C) 21 |
| B) 24 | D) 22 |
- Q.18** X-linked recessive trait is:
- |                                |                      |
|--------------------------------|----------------------|
| A) Hypophosphatemia            | C) Haemophilia       |
| B) Vitamin-D resistant rickets | D) Diabetes mellitus |

**2016**

- Q.19** The total number of genes in a population is called:
- |                |                    |
|----------------|--------------------|
| A) Gene pool   | C) Genome          |
| B) Allele pool | D) Genomic library |
- Q.20** A character determined by three alleles is:
- |                      |                    |
|----------------------|--------------------|
| A) Human skin color  | C) Human eye color |
| B) Human blood group | D) Human Rh factor |
- Q.21** Which one of the following is X-linked trait?
- |                          |                              |
|--------------------------|------------------------------|
| A) Male pattern baldness | C) Haemophilia               |
| B) Diabetes mellitus     | D) Erythroblastosis foetalis |

**2017**

- Q.22** Locus stands for:
- |                                                |
|------------------------------------------------|
| A) Position of gene on homologous chromosomes  |
| B) Regions of chromosomes                      |
| C) Position of an allele within a DNA molecule |
| D) Close regions of same chromosomes           |
- Q.23** Self-fertilization of  $F_1$  dihybrids, following independent assortment of alleles will result in:
- |                                                               |                                                                           |
|---------------------------------------------------------------|---------------------------------------------------------------------------|
| A) $\frac{3}{16}$ tall, round: $\frac{3}{16}$ dwarf, wrinkled | C) $\frac{9}{16}$ tall, round: $\frac{1}{16}$ $\frac{3}{16}$ dwarf, round |
| B) $\frac{9}{16}$ tall, wrinkled: $\frac{3}{16}$ dwarf, round | D) $\frac{3}{16}$ tall, wrinkled: $\frac{3}{16}$ dwarf, round             |
- Q.24** As a result of cross-fertilization of true breeding pea plant having purple colored flowers with that of white colored flowers, the offsprings will have flower with:
- |                                                  |               |
|--------------------------------------------------|---------------|
| A) $\frac{1}{2}$ purple and $\frac{1}{2}$ white  | C) All white  |
| B) $\frac{1}{2}$ purple and $\frac{1}{2}$ purple | D) All purple |

Q.25 Pure breeding lines of Pea were taken regarding seed shape – Round and Wrinkled and were crossed with no intermediate between parents. All offsprings were found to be round. These results show:

- A) Co-dominance
- B) Dominant – recessive relationship of alleles
- C) Incomplete dominance
- D) Over dominance relationship

Q.26 The gene for red-green color blindness is present on:

- A) Y-chromosome
- B) X-chromosome
- C) Autosome No. 7
- D) Autosome No.9

Q.27 Retake

Q.27 Different alleles of a gene that are both expressed in a heterozygous condition are called:

- A) Complete dominance
- B) Incomplete dominance
- C) Co-dominance
- D) Over-dominance

Q.28

Q.28 The region of the chromosome or more specifically, a length of the DNA molecule, which has a particular nucleotides sequence that codes for specific protein, is called

- A) Locus
- B) Gene
- C) Allele
- D) Kinetochore

Q.29 \_\_\_\_\_ is the exact position of a gene on the chromosome.

- A) Genotype
- B) Locus
- C) Centromere
- D) Trait

Q.30 Which one of the following is multiple allelic character?

- A) Length of stem in pea plant
- B) Shape of seed in pea plant
- C) Blood group of the human being
- D) Colour of flower in pea plant

Q.31 When two or more alleles do not show complete dominance or both the alleles are expressing independently in heterozygotic condition. Such a condition is called:

- A) Complete dominance
- B) Over-dominance
- C) Co-dominance
- D) Incomplete dominance



## UHS Topic-15

Q.32 There are \_\_\_\_\_ number of linkage groups in human.

A) 22

C) 46

B) 23

D) 80

Q.33 Chance of a cross over between two loci is directly proportional to their:

A) Length

C) Width

B) Distance

D) Thickness

2019

Q.34 Homozygous means:

A) Having two identical alleles of a gene

C) Alleles in an organism

B) Having two identical genes

D) Two different alleles of a gene

D) 100%

Q.35 In genetics, the term locus refers to the \_\_\_\_\_ of the gene on the chromosome.

A) Frequency

C) Position

B) Copy

D) Inversion

Q.36 A person was married to his cousin and both are heterozygous for sickle cell anemia. Among their four kids, what will be proportion of affected homozygotes?

A) 50%

C) 75%

B) 25%

D) 100%

Q.37 In which situation, genes are not assorted independently during meiosis in a chromosome?

A) When genes are not linked and their loci are far apart

B) When there are too many genes on a chromosome

C) When some genes have mutated on the chromosome

D) When genes are linked and their loci are close to each other

Q.38 If a carrier haemophilic female ( $X^{H^+}X^h$ ) is married to a haemophilic male ( $X^hY$ ). What will be the ratio of presence of haemophilia in the children? Select best answer from given condition.

 $X^{H^+}X^hX^hY$ 

A) 100% all females and males will be haemophilic

B) Carrier female 25% haemophilic female 25%, 25% normal male and 25% haemophilic male

C) Females and males both have 50% chances to getting haemophilia

D) Females have 50% chances of getting haemophilia and females will be 100% haemophilic.

# ANSWER KEY

## TOPIC-WISE MCQs

|    |   |    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|----|---|
| 1  | B | 11 | A | 21 | C | 31 | A | 41 | C |
| 2  | C | 12 | B | 22 | D | 32 | B | 42 | C |
| 3  | A | 13 | C | 23 | C | 33 | A | 43 | B |
| 4  | A | 14 | C | 24 | B | 34 | A | 44 | D |
| 5  | C | 15 | B | 25 | C | 35 | C | 45 | B |
| 6  | A | 16 | C | 26 | A | 36 | B | 46 | A |
| 7  | C | 17 | C | 27 | C | 37 | B | 47 | A |
| 8  | A | 18 | A | 28 | B | 38 | D |    |   |
| 9  | A | 19 | A | 29 | A | 39 | C |    |   |
| 10 | C | 20 | A | 30 | C | 40 | D |    |   |

## PAST PAPERS MCQs

|    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|
| 1  | B | 11 | C | 21 | C | 31 | C |
| 2  | A | 12 | B | 22 | A | 32 | B |
| 3  | B | 13 | B | 23 | D | 33 | B |
| 4  | D | 14 | A | 24 | D | 34 | A |
| 5  | C | 15 | C | 25 | B | 35 | C |
| 6  | B | 16 | B | 26 | B | 36 | B |
| 7  | D | 17 | D | 27 | C | 37 | D |
| 8  | A | 18 | C | 28 | B | 38 | B |
| 9  | C | 19 | A | 29 | B |    |   |
| 10 | C | 20 | B | 30 | C |    |   |

## PAST PAPER MCQs

2009

Q.1 \_\_\_\_\_ are used as important vectors in genetic engineering.

- A) Ribosomes  
B) Plasmids  
C) Nucleoids  
D) Mesosomes

Q.2 Temperature-insensitive (thermostable) enzyme used in PCR is:

- A) DNA polymerase I  
B) DNA polymerase III  
C) DNA ligase  
D) *Taq* polymerase

2010

Q.3 Gene can be synthesized in laboratory from messenger RNA by using:

- A) Restriction enzymes  
B) cDNA (complementary DNA)  
C) Vector  
D) Reverse transcriptase

Q.4 Antibiotic resistance gene for tetracycline and ampicillin are present in the plasmid:

- A) pSC 101  
B) pCR 101  
C) pBR 322  
D) pBR 233

2011

Q.5 The common vectors used in recombinant DNA technology are:

- A) Probes  
B) Palindromes  
C) Plasmids  
D) Prions

Q.6 The enzyme used to isolate gene from DNA is:

- A) Helicase  
B) Reverse Transcriptase  
C) Restriction enzyme  
D) DNA polymerase

Q.7 Which one of the following enzymes is temperature insensitive?

- A) DNA polymerase-I  
B) *Taq* polymerase  
C) DNA polymerase-III  
D) RNA polymerase

Q.8 Liposomes are used in gene therapy against:

- A) Hypercholesterolemia  
B) Severe combined immunodeficiency syndrome  
C) Cystic fibrosis  
D) Coronary artery angioplasty

Q.9 Genetically engineered cells are introduced into bone marrow cells in the treatment of:

- A) Hypercholesterolemia  
B) Severe combined immunodeficiency syndrome  
C) Cystic fibrosis  
D) Coronary artery angioplasty

2012

Q.10 In the recombinant DNA technology plasmids are used as:

- A) Genetic material  
B) Enzymes  
C) Vectors  
D) Probes

Q.11 In recombinant DNA technology \_\_\_\_\_ are tools for manipulating DNA.

- A) Viruses  
B) Chromosomes  
C) Enzymes  
D) Genes

Q.12 In which process multiple copies of the desired genes are produced?

- A) Polymerase chain reaction  
B) Gene sequencing  
C) Analyzing DNA  
D) DNA finger printing



Q.13 In DNA finger printing process, the use of \_\_\_\_\_ produces distinctive pattern on autoradiography or X-ray film.

- A) Restriction enzymes
  - B) Micro satellites
  - C) Macro satellites
  - D) Probes for genetic markers
- Q.14 The enzyme adenosine deaminase is missing in a person suffering from:
- A) Cystic fibrosis
  - B) Hypercholesterolemia
  - C) Severe combined immunodeficiency
  - D) Parkinson's disease

**2013**

Q.15 The phage commonly used as a vector in genetic engineering is:

- A) Gamma phage
  - B) T<sub>2</sub> phage
  - C) T<sub>4</sub> phage
  - D) Lambda phage
- Q.16 Restriction endonucleases are naturally occurring enzymes of:

- A) Viruses
- B) Bacteria
- C) Fungi
- D) Plants

Q.17 The DNA molecule formed from mRNA by reverse transcriptase is called:

- A) Complementary DNA
- B) Recombinant DNA
- C) Chimeric DNA
- D) Plasmid DNA

Q.18 The agent which separates the two strands of DNA in PCR is:

- A) DNA ligase
- B) Primer
- C) Heat
- D) Helicase

Q.19 Cystic fibrosis patients lack a gene that codes for trans membrane carrier of:

- A) Na<sup>+</sup> ion
- B) Cl<sup>-</sup> ions
- C) Ca<sup>2+</sup> ions
- D) K<sup>+</sup> ion

Q.20 Plants having foreign DNA incorporated into their cells are called:

- A) Clonal plants
- B) Transgenic plants
- C) Biotech plants
- D) Tissue cultured plants

**2014**

Q.21 pBR322 have antibiotic resistant genes for:

- A) Ampicillin and aspirin
- B) Streptomycin and metronidazole
- C) Ampicillin and tetracycline
- D) Penicillin and metronidazole

Q.22 The enzymes which act as molecular scissors in recombinant DNA technology:

- A) Exonucleases
- B) Polymerases
- C) Endonucleases
- D) Reverse transcriptase

Q.23 When two different pieces of DNA are joined together, the result is which one of the following?

- A) Complementary DNA
- B) Recombinant DNA
- C) Mutated DNA
- D) Cloned DNA

Q.24 The use of living organisms in industry for the production of useful products is known as:

- A) Parasitology
- B) Biochemistry
- C) Biotechnology
- D) Molecular biology

Q.25 Which one of the following is a correct sequence of PCR?

- A) Heating → Cooling → Add Primer → Copying of strand
- B) Heating → Add primer → Cooling → Copying of strand
- C) Add primer → Heating → Cooling → Copying of strand
- D) Cooling → Add primer → Heating → Copying of strand

**UHS Topic-16**

**Biotechnology**

**Q.26** Cystic fibrosis affects which one of the following cells of the body?

- |                      |                 |
|----------------------|-----------------|
| A) Epithelial cells  | C) Plasma cells |
| B) Endothelial cells | D) Blood cells  |

**Q.27** Plants having foreign DNA incorporated into their cells are called:

- |                      |                          |
|----------------------|--------------------------|
| A) Clone plants      | C) Parthenocarpic plants |
| B) Transgenic plants | D) Mutant giants         |

**2015**

**Q.28** Which one of the following is made up of radioactively labeled nucleotides?

- |                    |                    |
|--------------------|--------------------|
| A) Phage DNA       | C) Recombinant DNA |
| B) Genomic library | D) Gene probe      |

**Q.29** The DNA formed by the reverse transcription is called:

- |         |         |
|---------|---------|
| A) rDNA | C) cDNA |
| B) dDNA | D) DNA  |

**Q.30** Bacterial cells take up recombinant plasmids when they are treated with:

- |                    |         |
|--------------------|---------|
| A) $\text{CaCl}_2$ | C) KCl  |
| B) NaCl            | D) NaOH |

**Q.31** In cystic fibrosis, liposomes-microscopic vesicles are used which are coated with:

- |                 |                 |
|-----------------|-----------------|
| A) Healthy gene | C) Protein      |
| B) Chromosome   | D) Carbohydrate |

**Q.32** A technique in transgenic animals in which desired gene is inserted into the eggs of animal is called:

- |                                          |                                       |
|------------------------------------------|---------------------------------------|
| A) Embryonic stem cell mediated transfer | C) Retro-virus mediated gene transfer |
| B) Microinjection                        | D) Virus vectors                      |

**2016**

**Q.33** Restriction endonucleases cleave the \_\_\_\_\_ of duplex DNA.

- |                     |                        |
|---------------------|------------------------|
| A) Nitrogenous base | C) Phosphodiester bond |
| B) Pentose sugar    | D) Hydrogen bond       |

**Q.34** The enzyme which is responsible for the formation of bond between two double stranded DNA fragments is:

- |                 |             |
|-----------------|-------------|
| A) Endonuclease | C) Ligase   |
| B) Lipase       | D) Helicase |

**Q.35** \_\_\_\_\_ acts as an ideal expression system in recombinant DNA technology.

- |               |             |
|---------------|-------------|
| A) Retrovirus | C) Algae    |
| B) Rotavirus  | D) Bacteria |

**Q.36** The modified plasmid or phage DNA is called:

- |                    |         |
|--------------------|---------|
| A) Clone DNA       | C) cDNA |
| B) Recombinant DNA | D) rDNA |

**Q.37** \_\_\_\_\_ enzyme is very stable and active even at very high temperature.

- |                      |                          |
|----------------------|--------------------------|
| A) RNA polymerase    | C) Helicase              |
| B) DNA polymerase II | D) <i>Taq</i> polymerase |

**2017**

**Q.38** Restriction enzyme *EcoR1* cuts DNA to produce:

- |                         |                |
|-------------------------|----------------|
| A) Blunt ends           | C) Sticky ends |
| B) Non-palindromic ends | D) Split ends  |

**Q.39** Restriction endonucleases are produced by:

- |          |             |
|----------|-------------|
| A) Fungi | C) Bacteria |
| B) Algae | D) Viruses  |

Q.40 \_\_\_\_\_ is the first heat stable component used in PCR.

- A) *Taq* isomerase
- B) *Taq* helicase
- C) *Taq* polymerase
- D) *Taq* SSBP

Q.41 DNA segments of different lengths can be separated by a process of:

- A) Western blotting
- B) Northern blotting
- C) Autoradiography
- D) Gel electrophoresis

Q.42 Patients of Cystic Fibrosis (CF) produce thick mucus due to faulty:

- A) Trans-membrane carrier
- B)  $\text{Cl}^-$  ions
- C)  $\text{Na}^+$  ions
- D) Mucous membrane

### 2017-Retake

Q.43 Commonly used restriction enzyme is:

- A) EcoRI
- B) pSC 101
- C) pBR 322
- D) BamHI

Q.44 Gene can be from mRNA using:

- A) Reverse transcriptase
- B) DNA polymerase
- C) DNA ligase
- D) Helicase

Q.45 Collection of bacterial or bacteriophage clones is called:

- A) Gene pool
- B) Genome
- C) Genomic library
- D) Bean bag

Q.46 Formation of new strand of DNA from template strand is the function of:

- A) DNA polymerase
- B) RNA Polymerase
- C) DNA ligase
- D) Helicase

### 2018

Q.47 Enzymes used by the bacteria to cut the DNA of the invading virus for its protection is:

- A) Restriction exonuclease
- B) Restriction ligase
- C) Restriction endonuclease
- D) DNA polymerase

Q.48 DNA made by joining pieces from two or more different sources:

- A) Mutated DNA
- B) Restriction endonuclease
- C) Probes
- D) Recombinant DNA

Q.49 PCR means:

- A) Polymerase cross reaction
- B) Polymerase chain reaction
- C) Polymerase copy reaction
- D) Polymerase chronic reaction



**Q.50** Chemical nature of primer used in PCR process is \_\_\_\_\_.

- A) Protein
- B) Carbohydrate
- C) RNA
- D) DNA

**Q.51** Deficiency of enzyme \_\_\_\_\_ causes combined immunodeficiency syndrome.

- A) Adenosine transaminase
- B) Adenosine deaminase
- C) Adenosine polymerase
- D) Adenosine transcriptase

**2019**

**Q.52** Complementary DNA molecule is:

- A) An artificial DNA
- B) Single stranded DNA
- C) DNA from mRNA
- D) A small segment of chromosomal DNA

**Q.53** The plasmid pBR322 has antibiotic resistance genes for:

- A) Tetracycline and Doxycycline
- B) Streptomycin
- C) Doxycycline and Ampicillin
- D) Ampicillin and Tetracycline

**Q.54** DNA polymerase enzyme for PCR is isolated from bacteria *Thermus aquaticus* because:

- A) It can withstand high denaturation temperature
- B) It can withstand low denaturation temperature
- C) It can work at high speed
- D) It can be used again and again

**Q.55** Which enzyme is administered to the patients of Severe Combined Immunodeficiency Disease (SCID)?

- A) Pancreatic Enzyme
- B) Adenosine Deaminase (ADA)
- C)  $\beta$  – galactosidase
- D)  $\beta$  – lactamase

**Q.56** Transgenic mice have been used to produce:

- A) Protein rich milk
- B) A growth hormone
- C) Protein rich meat
- D) Extra hair

**ANSWER KEY****TOPIC-WISE MCQs**

|    |   |    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|----|---|
| 1  | B | 11 | B | 21 | C | 31 | D | 41 | A |
| 2  | A | 12 | A | 22 | C | 32 | A | 42 | D |
| 3  | C | 13 | C | 23 | B | 33 | D | 43 | A |
| 4  | B | 14 | B | 24 | C | 34 | D | 44 | A |
| 5  | D | 15 | B | 25 | B | 35 | D | 45 | B |
| 6  | A | 16 | A | 26 | C | 36 | D | 46 | B |
| 7  | B | 17 | D | 27 | B | 37 | B | 47 | D |
| 8  | B | 18 | B | 28 | C | 38 | D | 48 | D |
| 9  | A | 19 | B | 29 | C | 39 | B | 49 | B |
| 10 | B | 20 | C | 30 | C | 40 | D |    |   |

**PAST PAPERS MCQs**

|    |   |    |   |    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|----|---|----|---|
| 1  | B | 11 | C | 21 | C | 31 | A | 41 | D | 51 | D |
| 2  | D | 12 | A | 22 | C | 32 | B | 42 | A | 52 | C |
| 3  | D | 13 | D | 23 | B | 33 | C | 43 | A | 53 | D |
| 4  | C | 14 | C | 24 | C | 34 | C | 44 | A | 54 | A |
| 5  | C | 15 | D | 25 | A | 35 | D | 45 | C | 55 | B |
| 6  | C | 16 | B | 26 | A | 36 | B | 46 | A | 56 | B |
| 7  | B | 17 | A | 27 | B | 37 | D | 47 | C |    |   |
| 8  | C | 18 | C | 28 | D | 38 | C | 48 | D |    |   |
| 9  | B | 19 | B | 29 | C | 39 | C | 49 | B |    |   |
| 10 | C | 20 | B | 30 | A | 40 | C | 50 | D |    |   |

## PAST PAPER MCQs

Q.1 The survival of an organism during the struggle for existence is not random, but depends on:

- A) Its genetic constitution
- B) Its ability to acquire characters
- C) Its ability to over-produce
- D) Its ability to over-eat

Q.2 Large population size, random mating, no mutation and no emigration or immigration are postulates of:

- A) Hardy-Weinberg equation
- B) Mendel's law of segregation
- C) Mendel's law of independent assortment
- D) Theory presented by Schleiden and Schwann

## 2017-Retake

Q.3 Change in frequency of alleles at a locus that occurs by chance is called:

- A) Mutation
- B) Migration
- C) Non-random mating
- D) Genetic drift

Q.4 Which of the following factor causes change in gene frequency:

- A) Meiosis
- B) Sexual recombination
- C) Mutation
- D) Random mating

Q.5 According to the theory of natural selection, organisms produce:

- A) More offspring than supported
- B) Less offspring than supported
- C) Offspring according to the resources available
- D) Offspring to create resources

Q.6 Change in frequency of alleles that occurs by chance is called as:

- A) Natural selection
- B) Migration
- C) Mutation
- D) Genetic drift



# ANSWER KEY

## TOPIC-WISE MCQs

|    |   |    |   |    |   |
|----|---|----|---|----|---|
| 1  | B | 11 | A | 21 | A |
| 2  | A | 12 | B | 22 | D |
| 3  | B | 13 | D | 23 | A |
| 4  | B | 14 | C | 24 | D |
| 5  | C | 15 | C | 25 | C |
| 6  | A | 16 | B | 26 | D |
| 7  | B | 17 | D | 27 | A |
| 8  | B | 18 | B | 28 | C |
| 9  | C | 19 | A | 29 | D |
| 10 | C | 20 | C |    |   |

## PAST PAPERS MCQs

|   |   |
|---|---|
| 1 | A |
| 2 | A |
| 3 | D |
| 4 | C |
| 5 | A |
| 6 | D |

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